HONEGGERS': A STUDY IN FEED MANUFACTURING

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D. L. E.

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CHAPTER I

INTRODUCTION

Methodology and Sources

Any research project is valuable only in the accuracy and appropriateness of the procedures and the techniques employed. Since this is a historical study, the overall procedure followed was that of the historical method which Louis Gottschalk defines as "the critical examination and analysis of the existing records or other survivals of the past."[1] However, the author found the survival of records to be a problem. The author did find large voids in the records concerning Honeggers' & Co., Inc., especially in the years prior to 1946. Most smaller corporations keep records only as long as the minimum required by law because storage space is limited. This was the case of company records for Honnegers' & Co., Inc. The author was unable to obtain any kind of written records, primary or secondary, for the years 1927 through 1946. All reliance therefore for this period was necessarily placed upon verbal statements of the founding brothers, the very few long term employees who remembered the earlier period, and family members still living who also remembered this earlier period. This dearth of sources thus accounts for the fact that the partnership years from 1927 to 1946 are not adequately reconstructed by the author.

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[1] Louis Gottschalk, Understanding History: A Primer of Historical Method (Chicago: University of Chicago Press, 1964), p. 48.

Throughout the study, the inductive method of reasoning was followed. Specific data was collected, sifted, analyzed, and organized. From this process emerged the generalizations and conclusions reached in this thesis. In following this approach, three pitfalls were encountered and, hopefully, avoided in the final analysis presented, namely: (1) reaching an insufficiently substantiated conclusion because of the fear of admitting that a correct, exact conclusion could not be found, (2) assuming that a proposition were true because it could not be shown to be false; or the converse, and (3) assuming that the quantity of evidence determines its value rather than the quality of the evidence determining the value.

Although the historical approach was used as the main guideline in researching and writing this thesis, the author constructed and used a checklist for business research. This checklist was constructed with the aid of sources dealing with the techniques of business research.[2] The basic part of this checklist forms the major subdivisions of the third chapter of this thesis.

Chapter Two, which concerns the formula feed manufacturing industry as a whole, is not the major emphasis of this study and therefore no attempt has been made to be comprehensive or exhaustive. The purpose of this chapter is to give the reader a brief overview of the industry and to fulfill the third requirement of a corporate history mentioned below, namely, that the research must present the company at work within

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[2] Vernon Clove, Business Research: Basic Principles and Techniques (Lubbock, Texas: Rodgers Litho, Inc., 1958), pp. 5, 6.

its broad and dynamic setting. Numerous sources were, however, consulted for this chapter, including: (1) United States Department of Agriculture sources, (2) United States Department of Commerce sources, (3) publications and journals of the American Feed Manufacturing Association along with other industry journals, (4) books written about the feed manufacturing industry, and (5) pamphlets from a variety of other sources.

Chapter Three, on the Honegger corporation itself, comprises the main emphasis and justification of this study. Almost all of the information originated from the available and surviving records of the company. The definition of a business history, given below, necessitates the inclusion of more than simple historical facts. Thus this chapter includes economic and operational facts as well as historical facts. It was not the author's purpose to pose as a managerial consultant and attempt to discover real or alleged ills or malpractices within the company; rather the author's purpose was to give the reader an exact understanding of the nature and history of the Honegger corporation. An understanding of the operational aspects of the company is also necessary before any assertions or conclusions can be made or understood concerning the significance and the contributions made by Honeggers' & Co., Inc. Various techniques were applied in gleaning the information presented in this chapter. Company minute books and other records were examined and analyzed. Personal interviews with company executive and staff personnel were conducted. A very few personal or private records available were also consulted. Normally, a corporate history is concluded

10 or 20 years short of the present. This thesis traces the history into the present (1968) because during the writing of this thesis, the company changed ownership. Thus an era of 40 years was completed and provided an obvious period of history.

Chapter Four is a vital part of the total picture presented in this study. An attempt was made to survey the business activity of the local area in which the company is immediately and intimately active in order to assess some of the economic contributions of the company. Some factors considered and evaluated to determine the significance of the Honegger operation included: (1) monthly and annual payroll figures, (2) annual production figures, (3) distribution of facilities, (4) managerial decisions, (5) corporate finances, and (6) aid to the local community, economic and social.

Purpose of Study

This thesis is a business history since it covers the history of a single enterprise, Honeggers' & Co., Inc., under effective, unified control. Since no corporation operates in a vacuum but operates as a part of a larger industry, this study also relates Honeggers' to the accumulative trends and progress of a segment of the business element within the social structure, in other words, the feed manufacturing industry.

The scope of this thesis consists of an historical account of Honeggers' & Co., Inc., including its organization, structure, and operation. The time period covered includes the partnership years from 1927, to 1946 when the two founding brothers operated the company, and

the corporate years from 1946, to 1968 when the company went from a partnership to a closed corporation, to a public corporation, and finally to a wholly owned subsidiary of Petroleum Resources Corporation.

The need for scholarly histories of individual business units has become more widely recognized since 1927, when Wallace B. Donham, Dean of the Graduate School of Business at Harvard University, took the first step toward a separate and specialized field of history. An endowed professorship was created and Professor N. S. B. Gras was invited to undertake the work of developing and teaching this new area called business history. Professor Gras gave form and substance to this new field through guiding some 20 scholarly works in business history. Meanwhile, professors and their graduate students at many other major universities have followed in part the pattern set at Harvard.

As preparation for the writing of this thesis, the following business history titles were consulted or read: Cochran, The Pabst Brewing Company; Emmet and Jeuck, Catalogues and Counters: A History of Sears, Roebuck and Company; Giddens, Standard Oil Company (Indiana); Gray, Business Without Boundary: The Story of General Mills; Hidy, Timber and Men: The Weyerhaeuser Story; Larson and Porter, History of Humble Oil and Refining Company; Nevins and Hill, Ford: The Times, The Man, The Company; and two books which were pioneer efforts in written business (agricultural) history, Cavanagh, Seed, Soil and Science: the Story of Eugene D. Funk and Cavanagh, Funk of Funk's Grove. Also consulted was the first business history Master's thesis at Illinois State

University, Crawford, "The Paul F. Beich Company, 1854-1937." Complete bibliographical data for these works will be found in the bibliography.

While the pursuit of scholarly business histories was being established at Harvard University in the 1920's, other so-called and less scholarly histories were being compiled. Innumerable company histories were compiled to commemorate, in a laudatory way anniversaries of companies, chiefly for publicity purposes. Other histories were written to point out the evils of a given company. Still others were written to illustrate a theory of economic development, chiefly Marxian. A fourth type of history were written for the popular market, which generally has greater rewards for books that are highly critical of business than for books that are more balanced in their treatment. These types of histories are still being written and although they may have their place and purpose in history, they should not be confused with the more preferable scholarly and objective history that has as its purpose, the addition of knowledge of how business grows, how the entrepreneurs reach decisions, and in general, the role of the individual firm within the context of the industry and the community.

In the view of Professor Gras, the business unit is a group enterprise except in the case of the petty-capitalist, one-man concern. The business history of one firm or company, therefore, is the story of the group at work over a given period of time, administering and operating the primary unit of economic life. The truly valuable business history, accordingly, conforms to the following criteria: (1) the work must meet the essentials of good historical workmanship, (2) the work must be a

rounded and balanced description and analysis of the company business over a given time period, and (3) the work must present the company at work within its broad and dynamic setting.[3]

Business and corporate histories adhering to these criteria are more valuable than those histories mentioned above and have several contributions to make in the academic world. As a whole, these scholarly histories present valuable material for the study of relationships of American business and the general public. These histories can, as stated above, add much to the knowledge of business growth, entrepreneurial decision-making, and the role of the individual firm within a given industry.

The ramifications of business are broad and they are deep in time. The business system is part of a continuous process of historical change which conditions business and sets the limits within which it must operate. Business is a constant flux and its nature at any time is largely determined by its inheritance from the past. Such a study, in other words, can give a sense of the fundamental changes that have occurred.

Another contribution of business histories is that they can add to the understanding of the social functions of business, for whatever the form of the business unit or the system in which it operates, business is a social institution. As a functional division of society, the division which supplies the material needs and a broad range of services, business is part of a large network of relationships of individuals within society.

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[3] N. S. B. Gras, "Are You Writing a Business History?" Bulletin of the Business Historical Society, XVLLI (October, 1944), p. 20.

Furthermore, business and especially corporate histories may be used by the individual companies for such purposes as: (1) preserving the record, (2) setting the record straight, (3) building morale, and (4) public relations in the sense of helping to make friends for all business.[4]

Henrietta Larson, noted professor of business and economic history at Harvard University, indicates the essential contribution that histories of individual businessmen and individual companies can make to larger historical studies of industries, of business administrations, or of economic systems. This contribution is that the individual histories are the building blocks from which a synthesis of an industry can be constructed.[5]

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[4]Dr. Henry G. Baker, "The Business History as A Sound Factual Basis for Good Public Relations," Unpublished Speech, 1952.

[5]Henrietta Larson, Guide to Business History (Cambridge: Harvard University Press, 1948), p. 18.

CHAPTER II

THE FORMULA FEED INDUSTRY

Origin

There is no authoritative history of the formula feed industry in existence. The only history written to date is that of Larry Wherry, The Golden Anniversary of Scientific Feeding, which was published in 1947 and is now out of print. Hence the author has included this first chapter of some length to give the reader an overview of the formula feed industry so that Honeggers' & Co., Inc. might be placed in its proper perspective within the larger industry.

From colonial times until the beginning of the present century, feed for farm livestock was produced on the farm by the farmer who owned the livestock. Grains and forage crops were grown and consumed on the same farm. If any grinding or milling were necessary, the farmer would take his grain to the nearest grist mill to have it ground. Livesto feed, however, was usually fed in the same form in which it was harvested. The two principal livestock feeds of the time were hay and oats with some corn also being used.

With the advent of nutritional research (discussed more fully below), farmers became interested in a balanced ration for their livestock. Thus was born the formula feed industry. The formula feed industry consists of those manufacturers who specialize in combining by means of a registered or patented "formula," cereal grains which are

any grass yielding grain used for food or feed, with other ingredients and additives to produce what are termed "formula" or "mixed" feeds.[1] A feed additive is a mineral, vitamin, or some other chemical substance that is added to natural feedstuffs, either as nutrients or as medication for subclinical diseases.[2] The basic forms of the finished formula feeds are mash, pellets, and crumblings. Crumblings are pellets which have been formed and then crushed or broken. Variations and combinations of these basic forms are common in the industry. For the reader who may be unacquainted with the forms of feed now produced, the feed forms have been included in Appendix B.

Processing the raw feedstuffs and other ingredients into mixed or formula feed in the mill is a comparatively simple operation. The process consists of converting the incoming grains and other products into the form and size desired in the finished feed, adding other ingredients, and then mixing them according to the specifications of the manufacturer's formula. The final step is then forming a finished feed in the shape and consistency desired for feeding.[3]

The modern hammermill is the most widely used device for grinding. The grinding chamber consists of rows of loosely-mounted "swing" hammers or plates of hardened metal. These hammers pulverize the grain by striking it as they swing. The pulverized material is forced out of the mill chamber when it is ground finely enough to pass through

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[1] Samuel A. Matz, The Chemistry and Technology of Cereals as Food and Feed (Westport, Connecticut: The AVI Publishing Company, Inc., 1959), p. 404.

[2] Terry G. Summons, "Animal Feed Additives, 1940-1966," Agricultural History, 42:305-306 (October, 1968).

[3] Matz, op. cit., p. 409.

the perforations in the screens which are a part of the mill. Several sizes of screen openings are used depending upon the fineness of the end product desired. Poultry feeds are usually ground fine while ruminant feeds are usually ground coarse.

The formula feed industry today is still one of the top industries in the United States, based on the value of shipments, and the industry first achieved this position in less than 60 years after its birth (see Table 1). Commercial formula feed manufacturing began with and has progressed from individuals mixing feed with a scoop shovel to one of the most sophisticated and automated processed to be found anywhere in the United States. Dr. Robert W. Schoeff stated it this way:

> From a few small firms selling a few tons of feed, the formula feed industry has grown into one of the nation's top fifteen industries. The industry now produces approximately 40 million tons [now 50] of feed annually, valued at more than three billion dollars. Because its many plants are located off the main highways and the number of employees is relatively small, those outside the industry do not recognize and appreciate how important the feed industry is to the nation's economy.[4]

The formula feed industry's inception and growth has been and continues to be closely tied to utilization of the by-products from other industries such as meat packing, oilseed processing, and grain milling. Scientific research at the agricultural universities, agricultural experiment stations, the United States Department of Agriculture, and the feed industry research farms has produced an amazing number of new nutritional discoveries.

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[4] Dr. Robert W. Schoeff, "The Formula Feed Industry," Feed Production Handbook (Manhattan, Kansas: Feed Production School, Inc., 1961), p. 13.

TABLE 1

TOP 15 INDUSTRIES OF THE UNITED STATES
BASED ON VALUE OF SHIPMENTS
1966[a]

INDUSTRY	Value ($1000)
Motor vehicle	44,579,371
Blast furnace and steel mill products	19,430,722
Petroleum	18,000,856
Meat slaughtering	14,348,701
Paper and paperboard	7,369,104
Aircraft	6,886,246
Fluid milk	6,434,318
Organic chemistry products	5,366,078
Newspapers	5,256,025
Plastic products	4,922,745
Aircraft equipment	4,786,084
Aircraft engines	4,286,112
Bread and related products	4,264,469
Animal feeds	4,157,488
Radio and T.V. receiving sets	3,875,317

[a]United States Department of Commerce, Bureau of the Census, Value of Shipments by Classes, Circular M66 (AS)-2, 1966.

The original opportunity for the feed industry came when it was discovered that feed grains were deficient in protein, minerals, and vitamins; and that by-products of meatpacking, oilseed, and grain processing industries contained many of the elements essential for maximum animal growth and production.[5] Prior to the twentieth century, nutritionists knew only that proteins, fats, carbohydrates, and some inorganic salts made up the necessary components of a balanced diet.[6]

More adequate knowledge of nutrition began when a German chemist, Emil Wolff, introduced his feeding standards in Germany, in 1864, although Wolff's Standards dealt primarily with proteins. Little was done toward applying Wolff's Standards until they were modified by Lehmann in 1896. The resulting revision, known as the Wolff-Lehmann Standards, were used in Europe and the United States in computing livestock rations until 1915.[7] Other nutritional research in 1906-1907 by Sir Frederick Hopkins and E. V. McCollum, in 1912 by Casimir Funk, and by others in 1915, 1919, 1922, and the 1930's led to many more discoveries including that of vitamins and trace minerals.[8]

The Wolff-Lehmann Standards not only indicated the amount of crude protein needed by different classes of animals, but they also asserted

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[5]Dr. Robert W. Schoeff and Richard J. Baker, The Formula Feed Industry: Past-Present-Future (Manhattan, Kansas: Kansas State University, 1962), Unpublished Report, Formula Feeds Extention, p. 6.

[6]Summons, op. cit., p. 306.

[7]Larry Wherry, The Golden Anniversary of Scientific Feeding (Milwaukee: Business Press, 1947), p. 1.

[8]Summons, op. cit., p. 307.

that protein needs varied according to the functions the animal performed. From these facts evolved a third fact, that the protein was often the limiting factor in the production of meat, milk, and eggs. The combined result of this knowledge was that scientists and practical stockmen both began to look for sources of protein for feeds. The valuable proteins were found, not in new ingredients subsequently developed, but in the by-products of other industries which were going to waste because there seemed to be no practical way to utilize them. Often the discoveries were accidental, the unsought-for result of activities designed for other objectives (serendipity principle). The discovery of the value of molasses as feed for example, came about as a by-product of the manufacture of protective linings for battleships.[9]

The Marsden Company of Philadelphia, a 50 million dollar concern, was set up in the late 1890's to convert pith from cornstalks into protective linings for battleships. Dr. Harvey W. Wiley, later chief of the Bureau of Chemistry, Department of Agriculture, was retained as consulting chemist. The Marsden process consisted of taking the pithy material from the cornstalk, grinding it into a fine powder, mixing it with molasses, and then pressing it into cakes. The cakes, or bricks, were used to build a protective lining about three feet thick inside the shell of the battleship. Like the rubber lining of the gas tanks of modern bombers, it formed a self-sealing wall that closed up the hole when punctured by a shell.

Dr. Wiley, who as a boy in Virginia fed corn fodder to cattle, convinced the owners to sell the cornstalk blades and shell that remained after the pith was extracted as a feed mixed with molasses. Before the

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[9]Wherry, op. cit., p. 13.

molasses feed idea could be fully exploited, methods of warfare changed, and the ship builders abandoned the use of a protective cellulose-lining. The Marsden Company was left only with a by-product process of making molasses feed.

One of the first sources of proteins to be utilized was corn gluten feed. The American Glucose Company in Buffalo sold a feed called "Buffalo Feed," which brought six dollars a ton in 1896.[10] The use of corn gluten as a feed dates back to 1888, when it was a mill waste produced from the manufacture of starch and corn syrup. It was disposed of by dumping it into the Hamburg Canal in Buffalo, much to the displeasure of the nearby residents. According to the legend associated with this discovery, the famous blizzard of 1888 was the cause of the discovery of the value of corn gluten as a feed. After the great thaw which followed the blizzard in March, the Hamburg Canal overflowed its banks, carrying with it traces of the corn gluten wastes. Various herds of cows were known to have drunk freely of the canal water before it subsided. These herds, allegedly, soon amazed their owners by producing enormous amounts of milk , far more than they had been producing on timothy hay and cornstalks. The Hamlin family, who owned the processing plant near the canal, learned of this phenomenon and, in a short span of time, a market was born for the formerly unwanted waste products.[11]

Other sources of vital proteins were also sought. The first recorded attempts to extract oil from cotton seed in the United States, were tried in Natchez, Mississippi, in 1834, and in New Orleans in 1847.

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[10] Wherry, op. cit., p. 2.

[11] Ibid.

Neither attempt was successful as a commercial enterprise. Paul Aldige at New Orleans in 1885, is credited with the first successful commercial venture in this process.[12] The protein was found in the residual meal from the oil extraction process.

It is interesting to note that in the use of cotton seed oil wastes during the first two decades of the 1900's, its use was nearly extinguished by malpractice. The general attitude developed that "if a little was good, a lot would be better." Research at the agricultural experiment stations eventually aided the cotton seed producers by proving that the product would give excellent feeding results if properly and conservatively fed.

Another source of proteins was discovered in the waste products of the meat packing industry. Tankage and meat scraps were used little, if at all, before 1900. The first attempt to conserve the so-called tankage by-products of the meat packing industry by drying was made about 1870.[13] Until that time, the offal was dumped into a convenient river or allowed to decompose in the open air.

About 1900, poultry feeders at Petaluma, California, started using dried tankage in poultry rations. This impetus for the use of dried tankage in feeds came as a result of a successful experiment at Purdue University in 1901, and subsequent successful experiments at Iowa, Nebraska, and Ontario Experiment Stations.[14] Other important sources

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[12] Ibid., p. 4.

[13] Ibid., p. 5.

[14] Ibid., p. 6.

of protein were subsequently found in the waste products of linseed meal (late 1800's), blood (1898), corn distillers' grains (1900), milk by-products (1910), fish meal (1910-1915), and in soybean meal (since the 1920's).[15]

Additional nutritional research produced further important contributions to better nutritional feeding of livestock in the 1930's, 1940's, and 1950's so that by 1966, vitamins, antibiotics, and urea made up about 75 per cent of the additive market and approximately 85 per cent of the estimated 157 million tons of feed contained on additive or a medication.[16] The principle of serendipity still applied, however, to many of the discoveries made through this time.

Although accidental discoveries played a role in the discovery of sources of nutritional animal rations, serious nutritional research was being pursued. These early researchers seemed to regard the dairy cow as the animal most worthy of their attention. Dairying is thought to be the first farm industry to become specialized, and better feeding was recognized as the quickest way to meet the ever increasing demand for milk. While the Wolff Standards, mentioned above, were announced in Germany in 1863, they were not imported to the United States until 1874, when the American pioneer in feed research, Dr. Atwater, began his nutritional research. Even then it was not until 1880, that application of the standards was made. In 1880, Dr. Atwater began the teaching of scientific feeding and its value at the Connecticut Experiment Station then located at Wesleyan University in Middletown, Connecticut.[17]

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[15] Ibid., pp. 9-10.

[16] Summons, op. cit., p. 309.

[17] Ibid., p. 25.

About 1915, the Wolff-Lehmann Standards were in turn revised by a group of nutritionists, including Dr. F. B. Morrison and Dr. W. A. Henry who later collaborated in the writing of the first edition of the famous Feeds and Feeding.[18] After more than 20 editions, this book remains the feeding bible of researchers and practical stockmen alike.

The commercial formula feed industry began to develop simultaneously with the discoveries of the nutritional feed researchers. Although the formula feed industry as it is known today originated between 1895 and 1900, isolated attempts at commercial feed production can be traced as far back as the first mill of Ferdinand Schumacher at Akron, Ohio, in 1856.[19] Also, and more important, the real growth of the newly developing formula feed industry did not really blossom until the 1920's and the 1930's with the discoveries of the nutritional researchers made at that time. Until this time, the feed industry consisted largely of trading in grain and hay or mill feeds. The foundation for the new industry was laid by the researchers in the science of animal nutrition when they began developing feeding standards and demonstrating the value of protein and other supplements. The progress in animal nutrition, especially in the increased use of feed additives in the last 20 years, accounted for the most spectacular increases of meat production between 1940 and 1966, when beef production rose from 7,175 million pounds in

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F. B. Morrison and W. A. Henry, Feeds and Feeding (Ithaca, New York: Morrison Publishing Co., 1936).

Wherry, op. cit., p. 31. Schumacher is also well known for having patented Quaker Oats, the first breakfast food sold under a brand name.

1940 and 1966, ~~when beef production rose from 7,175 million pounds in 1940~~, to 18,424 pounds in 1964.[20]

The significance of the above facts in relation to the formula feed industry is that as the number of additives and ingredients increased and as laws regulating their use were put into effect, the mixing and grinding of the finished feed became far more complex than could be handled by the individual farmer on his own farm. Thus the commercial feed manufacturer became more and more important to the livestock producers. The reader is referred to Appendix A for a short selected chronology of the history of the formula feed manufacturing industry.

Government Control

Early feed manufacturers had few restrictions placed upon them regarding the type of mixture they could compound and sell. The demand for mixed feeds was increasing rapidly prior to and since the second World War due to urban population increases and rising standards of living which caused an increased market for livestock and poultry products. With this demand for commercially mixed feeds came, eventually, laws to regulate their production, laws which were aimed not at the

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[20] Summons, op. cit., p. 305. Three other factors besides progress in animal nutrition accounted for the spectacular increases in meat production. They were (1) improved technology which enabled stock raiser to handle larger numbers of animals in any given space, (2) advances in veterinary medicine which resulted in reduced disease losses, and (3) farmers acquired the capital and the skills needed to apply all of these advances. Other examples of the increased meat production are: pork-10,004 million pounds in 1940 to 12,523 million pounds in 1964; poultry production between 1940 and 1966 multiplied approximately ten times.

protection of the animals but at the protection of the humans who would consume these animal products and possibly suffer from additive residues in those products.[21]

When animals were fed largely on home grown farm grain and roughage, there was little need for feed control laws or any other regulation. But with the advent of the new type of commercially mixed formula feeds, it became necessary and obvious that regulation would be needed to prevent less scrupulous manufacturers from marketing ingredient of little or no feeding value and to protect the health of the consumer.

Even before 1906, some Eastern seaboard states realized the need for regulation and began to pass the necessary laws. New York, was the first to pass a state feed control law in 1894.[22] Massachusetts, and Vermont, followed with a feed control law in 1897. By 1915, at least one-half of the states had similar legislation.[23]

Animal feed shipped interstate has been subject to Federal control ever since the passage of the Food and Drug Act of 1906. The enactment of the Federal Food, Drug, and Cosmetic Act in 1938, imposed additional and more stringent labeling and tagging requirements on interstate shipments.[24] Federal controls, however, posed no undue problem to manufacturers until 1958, when the Delaney Clause (Food Additive

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[21] Ibid., p. 312.

[22] Wherry, op. cit., p. 42.

[23] Ibid., p. 43.

[24] Summons, op. cit., p. 312.

Amendment) was added to the 1938 law. The Delaney Clause required that the additive producer prove the safety of newly discovered substances before adding them to feeds, and in 1962, the Harris-Kefauver Amendment insisted that manufacturers also prove the efficacy of their additives.[25]

The Delaney Clause had a great influence on the feed industry and continues to be a major factor affecting formulation, manufacturing, and marketing of formula feeds. Retail feed dealers in particular must now pay close attention to mixing and distribution of feeds containing any drugs used as growth stimulants or for disease control. The design and engineering of new equipment and feed plant layout must include consideration for proper handling of drugs throughout the manufacturing process.[26]

Most of the early feed laws required only that the protein and fat content of the feed or feedstuff be declared. The laws did not require that all the ingredients of a mixed feed be listed or that the fiber or nitrogen-free extract be shown. As the tonnage of mixed feeds increased, the laws were amended to require listing of all the ingredients of a mixed feed be listed or that the fiber or nitrogen-free extract be shown. As the tonnage of mixed feeds increased, the laws were amended to require listing of all the ingredients, including those of little or no feeding value, and to limit the amounts of ingredients that were excessively high in fiber [27] (See Figure 1).

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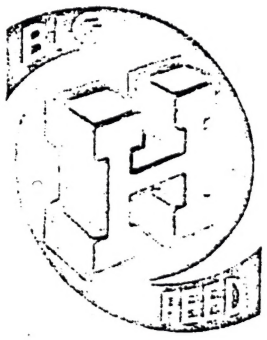
[25] Ibid.

[26] Schoeff and Baker, op. cit., p. 7.

[27] Ibid.

FIGURE 1

TYPE OF LABEL REQUIRED BY FEED CONTROL LAWS[a]



HONEGGERS' & CO., INC.

BIG "H" FEEDS

GENERAL OFFICES

FAIRBURY, ILLINOIS

61739

PIG POPPER MIXER - 202

MEDICATED

To increase rate of gain, stimulate growth, and improve feed efficiency in growing swine.

ACTIVE DRUG INGREDIENTS

Oxytetracycline	50 Gms. Per Ton
Arsanilic Acid	0.036%

GUARANTEED ANALYSIS

Crude Protein, not less than	36.0%
Crude Fat, not less than	1.0%
Crude Fiber, not more than	7.5%
Calcium, Maximum	3.0%
Calcium, Minimum	2.0%
Phosphorus, Minimum	1.5%
Iodine, Minimum	.0002%
Salt, Maximum	3.0%
Salt, Minimum	2.0%

INGREDIENTS

Soybean Meal, Meat Meal, Dehydrated Alfalfa Meal (Ethoxyquin added as a preservative), Wheat Middlings, Corn Distillers Dried Solubles, Cane Molasses, Vitamin A Palmitate, D-Activated Animal Sterol (source of Vitamin D-3), Vitamin B-12 Supplement, Riboflavin Supplement, Calcium Pantothenate, Niacin, Choline Chloride, Salt, Calcium Carbonate, Dicalcium Phosphate, Iron Sulphate, Manganous Oxide, Copper Oxde, Cobalt Carbonate, Calcium Iodate, Zinc Oxide.

2K8—571 202N-M

DIRECTIONS FOR USE:

MIXING DIRECTIONS

	Hog Developer-Med. 75 to 125 lbs. body weight
Pig Popper Mixer-202-Med.	400
Corn	1600
	2000 lbs.
Oxytetracycline	10 gms/ton
Arsanilic Acid	.007%

WARNING

Withdraw this feed 5 days before slaughter for food.

50 POUNDS NET WEIGHT

[a]Feed label courtesy of Honeggers' & Co., Inc., August 4, 1969.

The early days of feed control brought many problems. Among these problems was the fact that regulations often varied from state to state, and manufacturers found it difficult to meet the varying requirements when they engaged in interstate shipping. With the organization of the Association of American Feed Control Officials in November, 1909, steps were taken to improve the chaos of conflicting laws.[28]

In 1937, a proposed model fee bill was drawn up by this association, working in collaboration with the American Feed Manufacturers Association. Many states have since revised their feed control laws after this model.[29] It is interesting to note that the initiative came from the manufacturers in an effort to protect themselves from unfair competition, and in an effort to conform to the government law that would be passed the following year.

Feed control in each state is usually under the supervision of the state department of agriculture. Collection of feed samples is done by a staff of field inspectors, and samples are usually analyzed the state chemist. Taxes are assessed on feed to pay for this process. Methods of collecting these taxes vary from state to

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[28] Ibid.

[29] Ibid.

state and from another entire area of controversy. Some states levy the feed tax through a brand-registration fee. Other states have the brand-registration fee in addition to a tonnage tax. Still another states require that the manufacturers purchase an ingredient tag from the state. In some states, a tax-stamp must be purchased and be affixed to the ingredients tag.[30]

Production and Tonnage

Reliable estimates for the production of feed in the United States, are available only since 1930. Reference to Table 2 indicates that production reached a peak of 13.1 million tons in 1930, and then dropped sharply as the economic crisis of the depression made itself felt. It was not until 11 years later, in 1941, that production passed its previous mark. Production doubled during the next 10 years, climbing to 32.8 million tons in 1951. The largest per cent increase occurred in 1951, when tonnage increased 13 per cent over the previous year. This large increase was due to the expansion of the broiler industry has continued to expand since 1951 at an average rate of five per cent each year.

When the formula feed industry began, horse feeds, then dairy feeds, and finally poultry feeds were the main product lines offered. By 1961, the sale of formula feeds in the United States had changed to egg-type feeds, accounting for 29 per cent of the total feed manufactured,

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[30] Ibid.

compared to 20 per cent for broiler feeds, 19 per cent for dairy feeds, and 14 per cent for swine feeds.[31]

TABLE 2

ESTIMATED FORMULA FEED TONNAGE
AT FEED MANUFACTURER LEVEL
1930 to 1966[a]

Year	Million tons	Year	Million tons
1930	13.1	1950	29.1
1931	8.1	1951	32.8
1932	6.2	1952	34.4
1933	7.1	1953	33.7
1934	8.7	1954	35.0
1935	8.7	1955	33.6
1936	11.9	1956	35.7
1937	10.7	1957	36.0
1938	10.2	1958	40.0
1939	10.7	1959	40.0
1940	12.3	1960	39.5
1941	15.5	1961	42.3
1942	20.0	1962	44.0
1943	26.0	1963	44.0
1944	25.5	1964	44.8
1945	27.5	1965	45.2
1946	25.5	1966	50.2
1947	26.0		
1948	25.5		
1949	28.5		

[a]Dr. Robert W. Schoeff, Feed Extension Report, Formula Feed Extension, Kansas State University, 1967. Also unidentified circular, American Feed Manufacturers Association, 1967.

[31]Schoeff and Baker, op. cit., p. 12.